ZÄHL EQ1

Zähl

EQ1 STEREO EQUALIZER

SCOPE OF DELIVERY

- EQ1 stereo equalizer unit
  in the 500 series format

- this User Manual

- (spare) countersunk screws (4 pcs.) for rack
  mounting UNC 4-40 3/8, silver

- knurled head screw with M3 thread
  (tool for extracting the unit, see below)

- (spare) countersunk screw for front panel M3,
  black, see below

SETTING-UP OPERATION

EQ1 is designed to be operated in a API 500 series rack or compatible, occupying two slots.

1. Switch off power and remove the mains cable from your API 500 series rack

2. Carefully insert EQ1 into two free slots, keeping the unit well aligned until the card edge connectors meet their counterparts

3. Firmly push the unit in place – do not use excessive force

4. Fix the EQ1 front panel with 4 screws supplied by your rack manufacturer (in case they are not available you may use our enclosed spare screws)

5. Connect your audio I/Os to the rack and re-install power

Warning: Never insert a EQ1 unit while your rack is powered. It may cause damage to the unit as well as the rack.

EQ1 must not be operated at ambient temperatures above 40°C and below 5°C. As API series racks are equipped individually and the cabinets they are mounted in differ a lot in the way they are ventilated, there is no rule other than keeping an eye on the temperature inside the rack while in operation. Operating a unit beyond the limits can lead to severe damage.

In case you need to remove EQ1 from an API 500 series rack, you may use a gadget on the front panel: Remove the M3 countersunk screw in the LO MID section. In place of this screw, screw in the enclosed knurled head screw with M3 thread, gently without using any force. Then seize the tool and draw out the unit from the rack. Just draw on the tool, do not apply any force to the sides! Do not forget to unscrew the bolt and remount the M3 countersunk screw.

DESIGN FEATURES

- stereo design for mix & mastering as well as voices & instruments
- highly musical design
- intuitive, user-friendly, self-explaining layout
- lowest noise and distortion signal paths built with highest quality components
- audio switching on EQ gain potentiometer zero position for bypassing unused stages

- no microprocessor, no clock pulses, sequential logic only
- individual power stabilization on each module, no switched power circuitry
- fully compatible with API 500 module series specifications, occupying two slots

Twin Contest

HI with BELL/SHELF and MID with fully parametric BELL – same quality standard, but different circuit technologies and sound character. For optimum versatility MID frequency range switchable to HI range, HI frequency applicable at HI MID band. Similar: LO and LO MID.

Single Band Switching

Individual ON/OFF switching

- direct comparison each band ON/OFF while leaving GAIN pot in position
- minimizing noise/preserving signal integrity by switching OFF unused bands
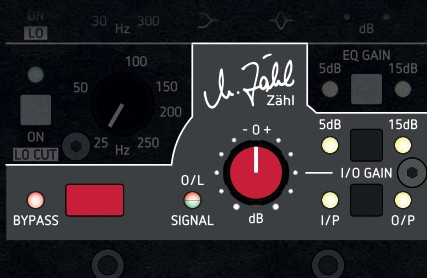
For Sensitive Use

Global EQ GAIN setting 5 dB or 15 dB

- GAIN resolution enhancement
- easier restoration of GAIN setting
- direct comparison of different GAIN settings

OPERATION

I/O Stage

- true overall hard bypass (relais), disconnecting I/Os

- gain stage switchable to input or output, thus optimizing headroom vs. noise

- gain range +/– 15 dB or +/– 5dB, trimmed zero gain at mid position

- SIGNAL LED (green) level present

- O/L LED (red) overload warning driven by 10 checkpoints throughout signal chain

HI EQ

- gain range +/– 15 dB or +/– 5 dB, bypass in mid position (potentiometer center sense logic)

- individual ON/OFF switch

- frequency 2 kHz to 20 kHz

- BELL/SHELF characteristic switchable for effective treatment or sensitive adjustment with very soft slope and 'airy' character

HI MID EQ

- gain range +/– 15 dB or +/–5 dB, bypass in mid position (potentiometer center sense logic)

- individual ON/OFF switch

- frequency 600 Hz to 6 kHz

- frequency range switchable to 1.8 kHz to 18 kHz (x3)

- adjustable Q-factor

LO MID EQ

- gain range +/- 15 dB or +/- 5dB, bypass in mid position (potentiometer center sense logic)
- individual ON/OFF switch
- frequency 200 Hz to 2 kHz
- frequency range switchable to 40 Hz to 400 Hz (/5)
- adjustable Q-factor

LO EQ

- gain range +/- 15 dB or +/-5 dB, bypass in mid position (potentiometer center sense logic)
- individual ON/OFF switch
- frequency 30 Hz to 300 Hz
- BELL/SHELF characteristic switchable with slight sub frequency roll-off at high gain shelf
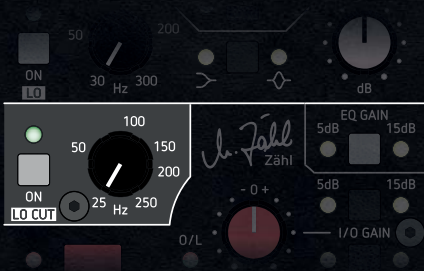
LO CUT

- frequency adjustable 25 Hz to 250 Hz
- individual ON/OFF switch

I/O DATA

Inputs

technology	electronically balanced, transformer-like behavior (either hot or cold may be connected to ground)
impedance	> 30 kOhm
max. level	> +26 dBu
reference level	+6 dBu/+4 dBu

Outputs

technology	electronically balanced, transformer-like behavior (either hot or cold may be connected to ground)
impedance	50 ohms
max. level	> +26 dBu
reference level	+6 dBu/+4 dBu

Power

DC Voltage	+/- 15...17V (from stablilized, noisefree DC Supply)
DC Current	< 250mA (i.e. 125mA max. per slot)

Connector Pin-Out

Card Edge 15 pin 0.156" space – compatible to EDAC type 306-015-520-102

01	Ground/Case	**06**	n.c.	**11**	n.c.
02	Bal. Audio Output +	**07**	n.c.	**12**	+15...+17VDC
03	n.c.	**08**	Bal. Audio Input –	**13**	0V / Common
04	Bal. Audio Output –	**09**	n.c.	**14**	-15...-17VDC
05	Shield	**10**	Bal. Audio Input +	**15**	n.c.

(Contact no. 01 is located at top)

!

EQ1 occupies two slots in the API rack.

The left card edge connector – seen from the front – comprehends left channel connections.
The right connector serves for the right channel.

Supply Inputs incl. Ground/Case always have to be fed to both connectors even if only one channel is used!

NOTES, SAFETY INSTRUCTIONS, WARRANTY

The equipment must only be used for the purpose described in this manual.

1. Keep the manual for further reference. When passing the equipment on, enclose the manual.

2. Do not operate the equipment at
   - very high air humidity (>85% relative humidity)
   - high ambient temperature (>40°C) or in the vicinity of heat radiating equipment or objects
   - places which are exposed to solar radiation
   - at very low temperatures (<5°C)

3. Ensure appropriate air ventilation.

4. Do not store the equipment at temperatures below -20°C or above +50°C.

5. Do never expose the equipment to environmental conditions which can lead to the incidence of condensation water.

6. Do not expose the equipment to mechanical stress or shock.

7. Ensure that liquids cannot get into the equipment.

8. Ensure that foreign objects cannot get into the equipment.

9. Only operate the equipment on a safe, legally approved, mains power supply

10. Only clean the equipment with smooth cleaning tissues and soft detergents.

11. Never open the equipment.

12. In case the equipment has been dropped or there is any external or functional damage, do not continue to operate the equipment. Have the equipment checked at your dealer's workshop or a person who is qualified to do such checks.

13. When shipping, use a package which protects the equipment from environmental impact such as mechanical shock or humidity.

14. The equipment applies to EU directives RoHS and WEEE. Dispose separately according to WEEE. Manufacturer WEEE register number: DE 90586269

15. Manufacturer's warranty covers the equipment to be free from defects of quality at the time of delivery for a period of 24 month presumed that
    - the equipment was treated properly according to its intended use
    - all information and safety instructions given in this manual have been followed
    - the equipment shows no external damage
    - the equipment is shipped to the manufacturer or to an authorised repairshop free of charge
    - a proof of purchase is supplied
    - a detailed failure description is supplied
    The manufacturer takes over cost of parts and labour incurred by repair. Any other costs including shipping and packaging will be charged.

16. We expressly exclude any liability for incidental or consequential damages which might arise from operating the equipment, including failure of the equipment.

17. All information in this manual has been carefully reviewed. It has been updated at the time of passing for press. Nevertheless we do not take over any liability for sufficiency or errors.

18. EEC Declaration of Conformity: The equipment applies to applicable EMC rules 2004/108/EEC.

CE

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Stereo Equalizer in the API 500 format

HI - parametric
gain range selectable +/–5 dB or +/–15 dB
bypass in mid position, individual bypass switch

frequency 2 kHz to 20 kHz

characteristic switchable bell or shelf with
very soft slope – ‚airy' character

HI MID - fully parametric
gain range selectable +/–5 dB or +/–15 dB
bypass in mid position, individual bypass switch

frequency 600 Hz to 6 kHz
freq. range switchable to 1.8 kHz to 18 kHz (x3)

adjustable Q-factor

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gain range selectable +/–5 dB or +/–15 dB
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frequency 200 Hz to 2 kHz
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gain range selectable +/–5 dB or +/–15 dB
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frequency 30 Hz to 300 Hz

characteristic switchable bell or shelf with slight
sub frequency roll-off at high gain shelf

LO CUT
frequency adjustable 25 Hz to 250 Hz

individual ON/OFF switch

INPUT/OUTPUT
assignable gain stage INPUT or OUTPUT

gain range selectable +/–5 dB or +/–15 dB

BYPASS
switchable overall hard bypass, disconnecting I/Os

SIGNAL LED
at input

OVERLOAD LED
driven by 10 checkpoints throughout signal chain

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For further information scan the qr-code to visit www.zaehl-eq1.com >>>